

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Application Review

Issue Date: xx/xx/2021

Region: Fayetteville Regional Office
County: Sampson
NC Facility ID: 8200139
Inspector's Name: Jeffrey D. Cole
Date of Last Inspection: 01/20/2021
Compliance Code: 3 / Compliance - inspection

Facility Data			Permit Applicability (this application only)				
Applicant (Facility's Name): Sampson County Disposal, LLC			SIP: 15A NCAC 02D .0516, 02D .0521, 02D .0524, 02D .1111, 02D .1806				
Facility Address: Sampson County Disposal, LLC 7434 Roseboro Highway Roseboro, NC 28382			NSPS: Subparts XXX and JJJJ NESHAP: MACT Subparts AAAA and ZZZZ PSD: N/A PSD Avoidance: N/A NC Toxics: N/A 112(r): N/A Other: Major Source of HAP under Title III				
SIC: 4953 / Refuse Systems NAICS: 562212 / Solid Waste Landfill							
Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V							
Contact Data			Application Data				
Facility Contact	Authorized Contact	Technical Contact	Application Number: 8200139.20A Date Received: 11/02/2020 Application Type: Modification Application Schedule: TV-Significant Existing Permit Data Existing Permit Number: 09431/T07 Existing Permit Issue Date: 07/10/2019 Existing Permit Expiration Date: 06/30/2024				
Joseph Smith Landfill General Manager (910) 525-4132 7434 Roseboro Highway Roseboro, NC 28382	Joseph Smith Landfill General Manager (910) 525-4132 7434 Roseboro Highway Roseboro, NC 28382	Joseph Smith Landfill General Manager (910) 525-4132 7434 Roseboro Highway Roseboro, NC 28382					
Total Actual emissions in TONS/YEAR:							
CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2019	0.7300	2.00	50.42	36.00	0.8100	32.03	11.29 [Toluene]
2018	0.3300	0.8600	46.43	16.00	0.3600	29.18	10.35 [Toluene]
2017	1.10	3.00	37.30	55.00	1.20	23.58	8.17 [Toluene]
2016	0.3300	0.4000	40.60	7.30	0.1700	22.83	8.07 [Toluene]
2015	0.7900	1.20	27.35	23.00	0.5100	17.51	6.09 [Toluene]
Review Engineer: Joshua L. Harris			Comments / Recommendations:				
Review Engineer's Signature: Date:			Issue 09431/T08 Permit Issue Date: xx/xx/2021 Permit Expiration Date: 06/30/2024				

1. Purpose of Application

Sampson County Disposal, LLC is an active MSW landfill located in Roseboro, Sampson County. The facility is requesting a significant modification of the current Title V air permit to include the updated requirements of 40 CFR 63, Subpart AAAAA, which were finalized in March 2020. The application will be required to go through the 30-day Public Notice and 45-day EPA Review periods prior to issuance.

The facility contact for this application is Joseph Smith, General Manager, (phone: 910-525-4132). A consultant, Smith + Gardner, Inc. (S+G), was used for the application submittal. The contact at S+G is Mac Jones, Staff Engineer (phone: 919-828-0577).

2. Facility Description

Sampson County Disposal began accepting waste in 2000, and consists of one active construction and demolition (C&D) unit and one active lined MSW unit (ID No. ES-1). According to the permit application, ES-1 is projected to close in CY2039. The landfill's design capacity is greater than 2.5 million Mg and 2.5 million cubic meters, and the NMOC emission rate is greater than 50 Mg/year. The Division of Waste Management (DWM), Solid Waste Section (SWS), issued a permit-to-construct, Permit No. 8202-MSWLF, for the Phase 3 lateral expansion on March 23, 2015, triggering the modification provisions of NSPS Subpart XXX; construction commenced in May 2015. Additionally, the landfill is also subject to MACT Subpart AAAAA. The landfill is classified as a Major Source of HAPs due to potential HCl emissions exceeding the 10 TPY individual HAP threshold, and also due to the total potential HAP emissions exceeding the 25 TPY threshold.

The landfill has a gas collection and control system (GCCS) which was installed to comply with the requirements of NSPS Subpart WWW. Gas is collected and routed primarily through a treatment system (ID No. CD-Treatment), then to a separate landfill-gas-to-energy site owned and operated by Black Creek Renewable Energy, LLC (ID No. 8200149). The landfill also has three flares permitted (ID Nos. CD-1, CD-02, and CD-3), two of which have been installed (ID Nos CD-1 and CD-3) and are operated on an as-needed basis. The facility has a number of insignificant activities including two leachate storage tanks, three diesel-fired emergency generators and two propane-fired emergency generators.

3. Application Chronology

11/02/20 The Division of Air Quality (DAQ), Raleigh Central Office (RCO), received Application No. 8200139.20A, which was submitted for a Significant modification to the facility's Title V air permit. A copy was forwarded to the Fayetteville Regional Office (FRO). The application contained the required forms, and there was no request for confidentiality. No application fees were required since the application was submitted to include modifications due to a rule change.

The application appeared to be administratively complete, however the "Form A" indicated the incorrect facility. Joshua Harris contacted Mac Jones via email requesting a corrected Form A.

11/03/20 RCO sent the facility a letter acknowledging receipt of the complete permit application.

11/06/20 RCO received the updated Form A indicating the correct facility.

12/08/20 Joshua Harris sent electronic copies of the draft permit and review documents to Booker Pullen, Samir Parekh, and Heather Carter for comments.

12/09/20 Booker Pullen replied with minor editorial comments.

12/15/20 Samir Parekh replied with no comments.

12/18/20 Jeff Cole replied with editorial comments for the FRO.

12/21/20 Joshua Harris sent electronic copies of the draft permit and review documents to Joseph Smith and Mac Jones for comments.

01/04/21 Joshua Harris received an email from Matt Lamb of S+G with a list of questions. These questions and DAQ's responses are located in Appendix A of this document.

Xx/xx/21 30-day public notice and 45-day EPA review periods begin.

Xx/xx/21 Public notice period ends, [comments received].

Xx/xx/21 EPA review period ends, [comments received].

Xx/xx/21 Air Quality Permit No. 09431T08 issued.

4. Table of Changes to Existing Permit No. 09431T07

Page No.	Section	Description of Changes
Cover and Throughout	Cover and Throughout	<ul style="list-style-type: none"> Updated permit revision numbers and dates throughout.
4	2.1 A. (Table)	<ul style="list-style-type: none"> Updated NMOC limit for NSPS XXX. Updated HAP standards.
5	2.1 A.3.d.	<ul style="list-style-type: none"> Inserted provisions allowing the facility to comply with the Operational Standards, Compliance provisions and Monitoring Requirements of MACT AAAA in lieu of the NSPS XXX requirements.
6	2.1 A.3.f.	<ul style="list-style-type: none"> Removed NSPS XXX Operational Standards and inserted cross references to MACT AAAA requirements.
	2.1 A.3.g.	<ul style="list-style-type: none"> Removed NSPS XXX Compliance Provisions and inserted cross references to MACT AAAA requirements.
	2.1 A.3.i.	<ul style="list-style-type: none"> Removed NSPS XXX Monitoring Requirements and inserted cross references to MACT AAAA requirements.
	2.1 A.3.j.	<ul style="list-style-type: none"> Removed duplicate recordkeeping requirements and inserted cross references to the corresponding MACT AAAA recordkeeping requirements.
	2.1 A.3.l.	<ul style="list-style-type: none"> Removed duplicate reporting requirements and inserted cross references to the corresponding MACT AAAA reporting requirements.
	2.1 A.3.m.	<ul style="list-style-type: none"> Removed annual reporting requirement and replaced with semi-annual reporting requirement cross referencing the MACT AAAA report.
7-8	2.1 A.3.n.i.(A) and 2.1 A.3.p.ix.	<ul style="list-style-type: none"> Inserted cross references to MACT AAAA for the closure report.
8-20	2.1 A.4.	<ul style="list-style-type: none"> Removed old MACT AAAA and NSPS WWW requirements and replaced with recently promulgated MACT AAAA requirements.
21-30	3	<ul style="list-style-type: none"> Updated General Conditions to latest version (version 5.5, 08/25/2020).

5. Changes in Equipment

There are no changes to the facility's permitted equipment or insignificant activities.

The facility's permitted emission sources are as follows:

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
ES-1 NSPS XXX MACT AAAA	Municipal solid waste landfill facility	CD-GCCS-1	One landfill gas collection and control system
		CD-Treatment	One gas treatment system
		CD-1	One landfill gas-fired flare (Approximately 4,700 scfm, 141 million Btu per hour heat input at 500 Btu per cubic foot heat value of LFG)
		CD-2	One landfill gas-fired flare (Approximately 4,700 scfm, 141 million Btu per hour heat input at 500 Btu per cubic foot heat value of LFG)
		CD-3	One landfill gas-fired flare (Approximately 4,700 scfm, 141 million Btu per hour heat input at 500 Btu per cubic foot heat value of LFG)

The facility's insignificant/exempt activities are as follows:

Emission Source ID No.	Emission Source Description
IES-01	Three leachate storage tanks (297,000-gallon capacity each)
IES-02 MACT ZZZZ	One diesel-fired emergency generator (75 kW)
IES-03 MACT ZZZZ	One diesel-fired emergency generator (75 kW)
IES-04 MACT ZZZZ	One diesel-fired emergency generator (75 kW)
IES-05 MACT ZZZZ, NSPS JJJJ	One propane-fired emergency generator (20 kW)
IES-06 MACT ZZZZ, NSPS JJJJ	One propane-fired emergency generator (20 kW)

6. NSPS, NESHAP, PSD, 112(r), CAM & Attainment Status

- **NSPS –**

- ✓ The MSW landfill (ID No. ES-1) is subject to 40 CFR 60, Subpart XXX, “Municipal Solid Waste Landfills that Commenced Construction, Reconstruction or Modification after July 17, 2014.” The Solid Waste Section issued a permit-to-construct for the Phase 3 lateral expansion on March 23, 2015, which increased the permitted design capacity and triggered the modification provisions of NSPS XXX. Construction on that expansion commenced in May 2015, triggering applicability of NSPS XXX.
- ✓ The MSW landfill (ID No. ES-1) is NOT subject to 40 CFR 60, Subpart WWW, “Municipal Solid Waste Landfills,” since Subpart WWW is superseded by Subpart XXX.
- ✓ The propane-fired emergency generators (ID Nos. IES-05 and IES-06) are subject to 40 CFR 60, Subpart JJJJ, “Stationary Spark Ignition Internal Combustion Engines,” since the construction dates are after the applicability date of the NSPS regulation.
- ✓ The diesel-fired emergency generators (ID Nos. IES-02 through IES-04) are NOT subject to 40 CFR 60, Subpart IIII, “Stationary Compression Ignition Internal Combustion Engines,” because the construction dates are prior to the applicability date of the NSPS regulation.

- **NESHAP –**

- ✓ The MSW landfill (ID No. ES-1) is subject to 40 CFR 63, Subpart AAAA “Municipal Solid Waste Landfills,” because it has a design capacity equal to or greater than 2.5 million Mg and 2.5 million m³, and has estimated uncontrolled NMOC emissions equal to or greater than 50 Mg/yr. Additionally, the facility is a Major Source of HAP emissions due to the HCl emissions from the flares.
- ✓ The diesel-fired emergency generators (ID Nos. IES-02 through IES-04) are subject to 40 CFR 63, Subpart ZZZZ, “Reciprocating Internal Combustion Engines,” and are considered as existing emergency engines under this regulation.
- ✓ The diesel and propane-fired emergency generators (ID Nos. IES-05 and IES-06) are subject to 40 CFR 63, Subpart ZZZZ, “Reciprocating Internal Combustion Engines,” and are considered as new emergency engines under this regulation. By complying with the requirements of NSPS JJJJ, the facility will be in compliance with MACT ZZZZ for these engines.

- **PSD –** The facility’s potential emissions do not exceed PSD permitting thresholds.

- ✓ Sampson County has triggered increment tracking under PSD for PM_{2.5}, PM₁₀, and NO_x. This permitting action neither consumes nor expands any increments.

- **112(r) –** The facility does not store any of the listed 112(r) chemicals in amounts that exceed the threshold quantities, therefore, the facility is not required to maintain a written Risk Management Plan (RMP).

- **CAM** – Compliance Assurance Monitoring (CAM) does NOT apply since the sources are regulated by NSPS and MACT regulations which were proposed after November 15, 1990 and control the pollutants which would be subject to CAM.
- **Attainment status** – Sampson County is in attainment for all criteria pollutants.

7. Regulatory Review

The facility is subject to the following air quality regulations in addition to the General Conditions:

- 15A NCAC 02D .0516: Sulfur Dioxide from Combustion Sources
- 15A NCAC 02D .0521: Control of Visible Emissions
- 15A NCAC 02D .0524: New Source Performance Standards, 40 CFR 60, Subpart XXX
- 15A NCAC 02D .1111: Maximum Achievable Control Technology, 40 CFR 63, Subpart AAAA
- 15A NCAC 02D .1806: Control and Prohibition of Odorous Emissions

The permit conditions remain unchanged except for the following:

15A NCAC 02D .0524: New Source Performance Standards, 40 CFR 60, Subpart XXX

The MSW landfill (ID No. ES-1) is subject to NSPS Subpart XXX. The permit conditions have been modified to cross reference corresponding requirements of MACT AAAA. Specifically, compliance with §§63.1958, 63.1960, and 63.1961 of MACT AAAA is used to demonstrate compliance with §§60.763, 60.765, and 60.766. In addition, recordkeeping and reporting requirements that have an equivalent requirement in MACT AAAA, but are not directly cited within NSPS XXX, have been cross referenced to allow the MACT requirement to satisfy NSPS XXX in order to minimize duplicate requirements. Those NSPS recordkeeping and reporting requirements that do not appear to have sufficient overlap with the MACT requirements have been retained and have stand-alone provisions within the permit conditions.

Continued compliance is expected.

15A NCAC 02D .1111: Maximum Achievable Control Technology, 40 CFR 63, Subpart AAAA

The MSW landfill (ID No. ES-1) is the subject source. The facility has chosen to begin complying with the updated MACT AAAA rules before the September 27, 2021 compliance date. The condition has been updated to include the requirements promulgated on March 26, 2020.

This permit condition contains the operational standards, compliance provisions, and monitoring requirements of §§63.1958, 63.1960, and 63.1961, as well as the recordkeeping and reporting requirements of MACT AAAA. These conditions include requirements for enhanced monitoring of elevated temperature wells, but the facility has requested and been granted permission for higher operating values for temperature at a number of wells under NSPS WWW and XXX; these higher operating values remain in place for the corresponding wells. For reports previously submitted, the Permittee is required to submit a statement with the first semi-annual report certifying that the listed reports were previously submitted to include the dates of submittal. Compliance is expected.

8. Other Regulatory Requirements

- A Zoning Consistency Determination is NOT required for this permit application.
- Though not required for this application, the application was sealed by John R. Fearrington (Seal No. 045299) who is a registered Professional Engineer in the State of North Carolina.
- The permit application fee was waived for this application since it is being made due to a regulatory change.

9. Air Toxics

This permitting action results in no increases in toxic emissions. Therefore, no additional toxics evaluation is required. The permit contains neither a 2D .1100 nor a 2Q .0711 toxics condition.

The following emission rates, projected through CY2042, were modeled for this facility in 2005:

Pollutant	Modeled Emission Rate	% AAL
1,1,2,2-Tetrachloroethane	523,848 lb/year	89%
Ethylene dichloride	315,360 lb/year	89%
Acrylonitrile	12,439 lb/year	89%
Benzene	9,989 lb/year	89%
Dichlorofluoromethane	22,752 lb/day	89%
Methylene chloride	1,997,280 lb/year	88%
	228 lb/hour	6%
Ethyl mercaptan	75.9 lb/hour	89%
Hexane	50,088 lb/day	89%
Hydrogen chloride	238 lb/hour	18%
Methyl mercaptan	37.9 lb/hour	89%
Vinyl chloride	31,536 lb/year	89%
Hydrogen sulfide	5,472 lb/day	89%
Toluene	213,960 lb/day	89%
	8,915 lb/hour	19%
Trichloroethylene (trichloroethene)	4,905,600 lb/year	89%
Xylene	122,928 lb/day	89%
	5,122 lb/hour	9%

10. Emissions Review

There are no changes to the facility's projected emission rates as a result of this application. The following emission rates were taken from the previous review for the T07 permit revision:

Pollutant	Potential Emissions tons/yr
PM (TSP)	34.33
PM ₁₀	34.33
PM _{2.5}	34.33
SO ₂	28.44
NO _x	82.65
CO	93.71
VOC	48.66

A 5-year history of the facility's actual emissions as reported on the annual AQEI are indicated in the table at the beginning of this review.

11. Statement of Compliance

The latest compliance inspection was conducted by Jeff Cole, FRO DAQ, on January 20, 2021. Mr. Cole found the facility to be operating in apparent compliance at that time.

12. Public Notice Review

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Consistent with 15A NCAC 02Q .0525, the EPA will have a concurrent 45-day review period. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit shall be provided to EPA.

The 30-day public notice period was from MONTH XX, 2021 through MONTH XX, 2021.

The EPA 45-day review period was from MONTH XX, 2021 through MONTH XX, 2021.

[Number of] comments were received during the public notice period and the EPA review period.

13. Comments and Recommendations

The permit application for a significant modification for Sampson County Disposal, LLC located in Roseboro, Sampson County, NC has been reviewed by DAQ to determine compliance with all procedures and requirements. DAQ has determined that this facility is complying or will achieve compliance, as specified in the permit, with all requirements that are applicable to the affected sources. The DAQ recommends the issuance of Air Permit No. 09431T08.

Appendix A: DAQ Responses to Questions Submitted by S+G

Question 1:

Can the portable meters manufactured by QED, LLC – Landtec (GEM-5000) or Elkins Earthworks, LLC (Envision) be approved for continued use in the wellfield?

DAQ Response:

EPA addressed the use of portable gas analyzers in its responses to public comments published in February 2020, as well as in responses to public comments made during the promulgation of NSPS Subpart XXX. Portable gas analyzers can be used, assuming these analyzers are calibrated and meet the quality assurance and quality control requirements for EPA Method 3A or ASTM D6522-11. These requirements are specifically stated in permit condition 2.1 A.4.r.ii.(C)(1) and (2), as cited within the memo.

No specific documentation for the stated portable meters was provided, but again if these analyzers are calibrated and meet the quality assurance and quality control requirements of EPA Method 3A or ASTM D6555-11, they may be used. Sampson County Disposal may request a specific compliance determination if necessary for these meters.

Question 2:

Can the temperature probes/thermistors supplied with portable meters manufactured by QED, LLC – Landtec (GEM-5000) or Elkins Earthworks, LLC (Envision) be approved for continued use in the wellfield?

DAQ Response:

EPA did not specify in the final rule a particular device to be used for measuring temperature. Following the logic above, any temperature measuring device should be adequate provided that the device is calibrated annually using the procedure in Section 10.3 of EPA Method 2, as specified in the permit.

As above, no specific documentation for the probes used with the stated portable meters was provided, but if these devices are calibrated annually using the procedure in Section 10.3 of EPA Method 2, they may be used. Sampson County Disposal may request a specific compliance determination if necessary for these meters.

Question 3:

Is enhanced monitoring required for wellheads that can be returned to compliance within 15 days in accordance with Condition 2.1.A.4.1.iv?

DAQ Response:

Yes. The enhanced monitoring requirements and root cause analysis/corrective action requirements cited are parallel requirements that are to be conducted concurrently, and are not dependent upon one another. Enhanced monitoring is to be conducted weekly, starting no later than 7 days after the first measurement in which LFG temperature greater than or equal to 145°F for a particular wellhead. Enhanced monitoring is no longer required if a higher operating value is approved, or if the temperature at the wellhead is below 145°F

Question 4:

Is down-well temperature monitoring required to be performed during weekly/monthly enhanced monitoring? This appears to conflict with A.4.r.v, which only requires down-well temperature monitoring for wells exceeding 165°F.

DAQ Response:

These requirements are directly from the rule, and don't appear to conflict. Down-well temperature monitoring is required annually and is not necessarily required to be performed during the weekly/monthly enhanced monitoring. While enhanced monitoring is required for wells that reach temperatures greater than or equal to 145°F, down-well temperature wouldn't be required for these wells unless the temperature continues to rise and reaches or exceeds 165°F. If during routine monitoring a well's temperature is discovered to already be greater than or equal to 165°F, enhanced monitoring, to include down-well temperature monitoring, would be required.

Question 5:

See Question 1.

DAQ Response:

This question references Question 1 but in regard to methane concentration monitoring. The memo cites specific permit condition 2.1 A.4.r.iv.(E), which states:

“Monitor the methane concentration with a methane meter using EPA Method 3C, EPA Method 18, or a portable gas composition analyzer to monitor the methane levels provided that the analyzer is calibrated and the analyzer meets all quality assurance and quality control requirements for EPA Method 3C or EPA Method 18.”

As is the case with Questions 1 and 2, no specific documentation for the stated portable meters was provided, but if these analyzers are calibrated and they meet all quality assurance and quality control requirements for EPA Method 3C or EPA Method 18, they may be used. Sampson County Disposal may request a specific compliance determination if necessary for these meters.

Question 6:

Will DAQ approve the use of a portable field instrument, or colorimetric sampling tube (e.g. Draeger tube)? Analytical costs related to laboratory analysis for CO is expected to exceed \$250 for a standard turnaround time of 7 to 10 business days. This cost will double for faster turnaround time, depending on the lab's workload at the time. This cost does not include collection, shipping, or handling.

DAQ Response:

EPA addressed the use of colorimetric methods in its responses to public comments published in February 2020. In response to a question regarding the use of colorimetric methods, EPA cited the subjective nature of such methods, and the fact that they are susceptible to interference by other pollutants commonly present in landfill gas, such as hydrogen sulfide. Because of this, EPA chose to finalize Method 10 as the means by which carbon monoxide concentrations should be measured. Therefore, DAQ does not grant permission to use colorimetric methods in place of Method 10, as finalized in the rule.

EPA did not finalize a requirement for samples to be analyzed by an independent laboratory, recognizing logistical and cost concerns. In its responses to public comments, EPA expressly states

that since Method 10 is a performance-based method, any technology can be used as long as it can be demonstrated to meet the criteria of Method 10.

No particular “portable field instruments” other than Draeger tubes, were specified with this request, nor was specific documentation provided. Assuming that a particular technology can be demonstrated to meet the criteria of EPA Method 10, it may be used. Sampson County Disposal may request a specific compliance determination if necessary for such instruments.

Question 7:

Unless alternative field monitoring methods are approved as requested in Question 6, the facility will not be able to receive CO measurement results from the lab in time to report within 24 hours of the measurement. Can alternative monitoring methods in Question 6 be approved, or can the 24-hour reporting window be extended?

DAQ Response:

As previously stated, EPA did not finalize a requirement for samples to be analyzed by an independent laboratory. The 24-hour report is a direct requirement of the rule, and DAQ cannot grant an on-going extension of the 24-hour reporting requirement in order to accommodate lab costs/turnaround times.

If Sampson County Disposal has concerns regarding the ability to make a specific report within the 24-hour reporting window, the facility may petition EPA for approval.